

CLAIMS

What is claimed is:

1. A switching system, the switching system comprising:
  - 5 a first set of switches configured with a first instance of meshing software such that the switches in the first set are members of a first mesh domain;
  - a second set of switches configured with a second instance of the meshing software such that the switches in the second set are
  - 10 members of a second mesh domain; and
  - a third set of switches configured with both the first and second instances of the meshing software such that the switches in the third set are members of both the first and second mesh domains.
- 15 2. The switching system of claim 1, further comprising a link between a mesh port of a switch in the first set and a mesh port of a switch in the third set, wherein both mesh ports are configured to be members of the first mesh domain.
- 20 3. The switching system of claim 2, further comprising a link between a mesh port of a switch in the second set and a mesh port of a switch in the third set, wherein both mesh ports are configured to be members of the second mesh domain.
- 25 4. The switching system of claim 1, wherein a switch in the third set is configured to provide routing of packets between the first and second mesh domains.
- 30 5. The switching system of claim 1, wherein the switches are configured to insert a mesh identifier in a packet to identify which instance of the meshing software is associated with the packet.

6. The switching system of claim 5, wherein the switches are further configured with a mesh debug protocol which periodically advertises the mesh identifier(s) associated with each switch to other switches.
- 5 7. A packet switch apparatus, the apparatus comprising:  
multiple ports configured to receive and transmit data packets;  
a switch controller coupled to the plurality of ports; and  
memory coupled to the switch controller and configured to hold  
instructions and data for use by the controller,  
10 wherein the memory holds multiple instances of meshing software that  
are executing on the apparatus.
8. The packet switch apparatus of claim 7, wherein at least one port is  
configured to be a mesh port that is a member of a first mesh domain, and  
15 at least one port is configured to be a mesh port that is a member of a  
second mesh domain.
9. The packet switch apparatus of claim 8, wherein at least one port is  
configured to be a non-mesh port that is not a member of any mesh  
20 domain.
10. The packet switch apparatus of claim 7, wherein the memory further  
includes a routing module to provide intra-switch routing of packets  
between different mesh domains.  
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11. The packet switch apparatus of claim 7, wherein the apparatus is  
configured to insert a mesh identifier in a packet to identify which instance  
of the meshing software is associated with the packet.
- 30 12. The packet switch apparatus of claim 11, wherein the apparatus is further  
configured with a mesh debug protocol which periodically advertises the  
mesh identifier(s) associated with the apparatus to other switches.

13. A method of configuring a switching system, the method comprising:  
configuring a first set of switches with a first instance of meshing software  
such that the switches in the first set are members of a first mesh  
domain;  
5 configuring a second set of switches with a second instance of the  
meshing software such that the switches in the second set are  
members of a second mesh domain; and  
configuring a third set of switches with both the first and second instances  
of the meshing software such that the switches in the third set are  
10 members of both the first and second mesh domains.
14. The method of claim 13, further comprising:  
linking a mesh port of a switch in the first set and a mesh port of a switch  
in the third set, wherein both mesh ports are configured to be  
15 members of the first mesh domain; and  
linking a mesh port of a switch in the second set and a mesh port of a  
switch in the third set, wherein both mesh ports are configured to  
be members of the second mesh domain.
- 20 15. The method of claim 14, further comprising configuring a switch in the  
third set to provide routing of packets between the first and second mesh  
domains.
- 25 16. A method of providing multiple-instance meshing in a switching system,  
the method comprising:  
inserting a mesh identifier into a meshing packet to identify which mesh  
instance is associated with the packet; and  
processing the meshing packet using an instance of meshing software  
corresponding to the mesh identifier.  
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17. The method of claim 16, further comprising:  
periodically advertising from a switch that mesh identifiers associated with  
the switch to other switches in the switching system.